

GLOBAL CARNIVOROUS PLANT DIVERSITY
A CONTRIBUTION FROM THE CARNIVOROUS PLANT
SPECIALIST GROUP (CPSG) OF THE INTERNATIONAL
UNION FOR THE CONSERVATION OF NATURE (IUCN, SSC)

JAN SCHLAUER • Zwischenstr. 11 • 60594 Frankfurt/Main • Germany •
jan@carnivorousplants.org

Keywords: conservation: biodiversity, taxa.

Introduction

For species conservation and for taxonomic purposes it is necessary to know the geographical distribution of the species concerned. The "value" of a region as a resource of biodiversity is usually estimated from the number of species occurring in and/or endemic to it. However, simple species numbers are not always a reliable measure of biodiversity because they depend on the circumscriptions of species, which can vary considerably with the species concept applied. In order to arrive at a somewhat more consolidated basis, taxonomic ranks above species (viz. section, genus, and family) have been added in the present survey. Additionally, a division between Lentibulariaceae + Byblidaceae (sympetalous plants) and the other (dialypetalous) families has been made in order to reflect differences between groups of different phylogenetic origin. The sympetalous families are believed to be members of a younger group (appearing in Early Tertiary) than the dialypetalous ones. While there are certainly young species in several of the other groups (e.g. in *Drosera*), the respective families are comparatively old (with assumedly pre-Tertiary origins).

In the following tables, the numbers of carnivorous plant species endemic to/occurring in the world's floristic regions and provinces (as outlined by Takhtajan, 1986) are given. Data were taken from the carnivorous plant database on the internet (http://www.labs.agilent.com/bot/cp_home). The families considered are: Droseraceae, Drosophyllaceae, Dioncophyllaceae, Nepenthaceae, Cephalotaceae, Roridulaceae, Sarraceniaceae, Byblidaceae, and Lentibulariaceae. Sectional classification follows Casper (1966) for *Pinguicula*, Fromm-Trinta (1977) for *Gentlisea*, Schlauer (1996) for *Drosera*, and Taylor (1989) for *Utricularia*. No sections (i.e. only one section for all species in the genus) were recognized in *Nepenthes* (the genus does not show marked infrageneric differentiation above species level, and former attempts at a sectional classification were obviously artificial) and the remaining small genera.

Several taxa occur in more than one province, but some of these taxa are restricted to a single region. Therefore, the count of taxa endemic to a region may exceed the sum of taxa endemic to its constituent provinces.

The floristic regions and provinces are defined as follows:

- I. Circumboreal Region
 - 1 Arctic
 - 2 Atlantic Europe
 - 3 Central Europe
 - 4 Illyria or Balkan
 - 5 Pontus Euxinus
 - 6 Caucasus
 - 7 Eastern Europe
 - 8 Northern Europe
 - 9 Western Siberia
 - 10 Altai-Sayan
 - 11 Central Siberia
 - 12 Transbaikalia
 - 13 Northeastern Siberia
 - 14 Okhotsk-Kamchatka
 - 15 Canada incl. Great Lakes
- II. Eastern Asiatic Region
 - 16 Manchuria
 - 17 Sakhalin-Hokkaido
 - 18 Japan-Korea
 - 19 Volcano-Bonin
 - 20 Ryukyu or Tokara-Okinawa
 - 21 Taiwan
 - 22 Northern China
 - 23 Central China
 - 24 Southeastern China
 - 25 Sikang-Yuennan
 - 26 Northern Burma
 - 27 Eastern Himalaya
 - 28 Khasi-Manipur
- III. North American Atlantic Region
 - 29 Appalachians
 - 30 Atlantic and Gulf Coastal Plain
 - 31 North American Prairies
- IV. Rocky Mountain Region
 - 32 Vancouver
 - 33 Rocky Mountains
- V. Macaronesian Region
 - 34 Azores
 - 35 Madeira
 - 36 Canaries
 - 37 Cape Verde
- VI. Mediterranean Region
 - 38 Southern Morocco
 - 39 Southwestern Mediterranean
 - 40 South Mediterranean
 - 41 Iberia
 - 42 Balears
 - 43 Liguria-Tyrrhenia
 - 44 Adriatic
 - 45 East Mediterranean
 - 46 Crimea-Novorossiysk
- VII. Saharo-Arabian Region
 - 47 Sahara
 - 48 Egypt-Arabia
- VIII. Irano-Turanian Region
 - 49 Mesopotamia
 - 50 Central Anatolia
 - 51 Armenia-Iran
 - 52 Hyrcania
 - 53 Turania or Aralo-Caspia
 - 54 Turkestan
 - 55 Northern Baluchistan
 - 56 Western Himalaya
 - 57 Central Tien Shan
 - 58 Dzungaria-Tien Shan
 - 59 Mongolia
 - 60 Tibet
- IX. Madrean Region
 - 61 Great Basin
 - 62 California
 - 63 Sonora
 - 64 Mexican Highlands
- X. Guineo-Congolian Region
 - 65 Upper Guinea
 - 66 Nigeria-Cameroon
 - 67 Congo
- XI. Usambara-Zululand Region
 - 68 Zanzibar-Inhambane
 - 69 Tongoland-Pondoland
- XII. Sudano-Zambezian Region
 - 70 Zambezi
 - 71 Sahel
 - 72 Sudan
 - 73 Somalia-Ethiopia
 - 74 South Arabia
 - 75 Socotra
 - 76 Oman
 - 77 South Iran
 - 78 Sindia
- XIII. Karoo-Namib Region
 - 79 Namibia
 - 80 Namaland
 - 81 Western Cape
 - 82 Karoo
- XIV. St. Helena and Ascension Region
 - 83 St. Helena and Ascension
- XV. Madagascan Region
 - 84 Eastern Madagascar
 - 85 Western Madagascar
 - 86 Southern and Southwestern Madagascar
 - 87 Comoro
 - 88 Mascarenes
 - 89 Seychelles
- XVI. Indian Region
 - 90 Ceylon (Sri Lanka)
 - 91 Malabar
 - 92 Deccan
 - 93 Upper Gangetic Plain
 - 94 Bengal
- XVII. Indochinese Region
 - 95 South Burma
 - 96 Andamanes
 - 97 South China
 - 98 Thailand
 - 99 North Indochina
 - 100 Annam
 - 101 South Indochina
- XVIII. Malesian Region
 - 102 Malaya
 - 103 Borneo
 - 104 Philippines
 - 105 Sumatra
 - 106 South Malesia
 - 107 Celebes
 - 108 Moluccas and W New Guinea

- 109 Papua
- 110 Bismarck Archipelago
- XIX. Fijian Region
 - 111 New Hebrides
 - 112 Fiji
- XX. Polynesian Region
 - 113 Micronesia
 - 114 Polynesia
- XXI. Hawaiian Region
 - 115 Hawaii
- XXII. Neocaledonian Region
 - 116 New Caledonia
- XXIII. Caribbean Region
 - 117 Central America
 - 118 West Indies
 - 119 Galapagos
- XXIV. Region of the Guayana Highlands
 - 120 Guayana
- XXV. Amazonian Region
 - 121 Amazonia
 - 122 Llanos
- XXVI. Brazilian Region
 - 123 Caatingas
 - 124 Central Brazilian Uplands
 - 125 Chaco
 - 126 Atlantic Brazil
 - 127 Parana
- XXVII. Andean Region
 - 128 Northern Andes
 - 129 Central Andes
- XXVIII. Cape Region
 - 130 Cape
- XXIX. Northeast Australian Region
 - 131 North Australia
 - 132 Queensland
 - 133 Southeast Australia
 - 134 Tasmania
- XXX. Southwest Australian Region
 - 135 Southwest Australia
- XXXI. Central Australian or Eremaean Region
 - 136 Eremaea
- XXXII. Fernandezian Region
 - 137 Juan Fernandez
- XXXIII. Chile-Patagonian Region
 - 138 Northern Chile
 - 139 Central Chile
 - 140 Pampas
 - 141 Patagonia
 - 142 Tierra del Fuego
- XXXIV. Region of the South Subantarctic Islands
 - 143 Tristan-Gough
 - 144 Kerguelen
- XXXV. Neozeylandic Region
 - 145 Lord Howe
 - 146 Norfolk
 - 147 Kermadec
 - 148 Northern New Zealand
 - 149 Central New Zealand
 - 150 Southern New Zealand
 - 151 Chatham
 - 152 New Zealand Subantarctic Islands

Conclusions and Recommendations

Generally, centres with comparatively high numbers of indigenous carnivorous plant taxa are also centres of carnivorous plant endemism (SW Australia and the Malesian region for dialypetalous carnivorous plants, in the first line the genera *Drosera* and *Nepenthes*, respectively; Mexico, the Guayana Highland, and N Australia for sympetalous carnivorous plants, in the first line *Pinguicula* and *Utricularia*). The areas of greatest species richness are usually also rich in indigenous and endemic sections. Generic and family diversity is fairly low in most regions (the highest count of indigenous genera being five in SE N America and in Upper Guinea, the highest family count being four in W New Guinea, NE and SW Australia). Endemic genera are found in SE N America (*Dionaea*), W N America (*Darlingtonia*), the SW Mediterranean (*Drosophyllum*), Upper Guinea (*Triphyophyllum*), the Guayana Highland (*Heliamphora*), the Cape region (*Roridula*), and SW Australia (*Cephalotus*).

Future efforts of species and especially of habitat conservation in connection with carnivorous plants should take into account the global "importance" of the floristic regions and provinces concerned. Floristic provinces marked by high endemism should be given particular attention. Perhaps surprisingly for some, areas of great carnivorous plant diversity (especially at higher taxonomic ranks like genera and families) are not confined to the tropics or to developing countries. It is to be hoped that this information will reach the persons and organizations responsible for and in charge of appropriate legislation.

Table I. Global diversity of carnivorous plants. Numbers of taxa are given. If no taxa occur in a region with more than one province, the null data for the individual provinces have been omitted. E: endemic; I: indigenous.

Region Province		Dialypetalous								Sympetalous							
		Families		Genera		Sections		Species		Families		Genera		Sections		Species	
		E	I	E	I	E	I	E	I	E	I	E	I	E	I	E	I
I	1	0	1	0	1	0	1	0	2	0	1	0	2	0	3	0	9
	2	0	1	0	1	0	1	0	4	0	1	0	2	0	4	0	12
	3	0	2	0	2	0	2	0	5	0	1	0	2	0	3	1	12
	4	0	1	0	1	0	1	0	2	0	1	0	2	0	3	0	6
	5	0	2	0	2	0	2	0	4	0	1	0	2	0	2	0	4
	6	0	2	0	2	0	2	0	2	0	1	0	1	0	1	0	1
	7	0	2	0	2	0	2	0	5	0	1	0	2	0	2	0	5
	8	0	1	0	1	0	1	0	3	0	1	0	2	0	3	0	8
	9	0	1	0	1	0	1	0	2	0	1	0	2	0	3	0	6
	10	0	1	0	1	0	1	0	2	0	1	0	2	0	3	0	7
	11	0	1	0	1	0	1	0	2	0	1	0	2	0	3	0	7
	12	0	1	0	1	0	1	0	2	0	1	0	2	0	3	0	6
	13	0	1	0	1	0	1	0	2	0	1	0	2	0	3	0	6
	14	0	1	0	1	0	1	0	2	0	1	0	2	0	2	0	6
	15	0	2	0	2	0	2	1	5	0	1	0	2	0	6	0	15
Total		0	3	0	3	0	3	2	7	0	1	0	2	0	9	3	26
II	16	0	1	0	2	0	2	0	3	0	1	0	2	0	2	0	4
	17	0	1	0	1	0	1	0	2	0	1	0	2	0	3	0	6
	18	0	1	0	2	0	5	0	6	0	1	0	2	0	6	2	13
	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2
	21	0	1	0	1	0	3	0	3	0	1	0	1	0	4	0	7
	22	0	0	0	0	0	0	0	0	0	1	0	2	0	3	0	3
	23	0	1	0	1	0	1	0	1	0	1	0	2	0	5	0	8
	24	0	1	0	1	0	3	0	4	0	1	0	1	0	4	1	7
	25	0	0	0	0	0	0	0	0	0	1	0	2	0	5	0	10
	26	0	1	0	1	0	1	0	1	0	1	0	1	0	4	0	8
	27	0	1	0	1	0	1	0	1	0	1	0	2	0	5	0	11
	28	0	2	0	2	0	3	1	3	0	1	0	1	0	6	0	10
Total		0	2	0	3	0	6	1	9	0	1	0	2	0	9	6	33
III	29	0	2	0	2	0	2	0	5	0	1	0	1	0	5	0	14
	30	0	2	1	3	1	3	7	13	0	1	0	2	0	6	6	20
	31	0	1	0	1	0	1	0	4	0	1	0	1	0	2	0	6
Total		0	2	1	3	1	3	11	17	0	1	0	2	0	6	8	23
IV	32	0	2	1	2	1	2	1	3	0	1	0	2	0	2	0	7
	33	0	1	0	1	0	1	0	2	0	1	0	1	0	1	0	3
Total		0	2	1	2	1	2	1	4	0	1	0	2	0	2	0	7
V	Total	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table1: Continued

Region		Province		Dialypetalous								Sympetalous							
				Families		Genera		Sections		Species		Families		Genera		Sections		Species	
				E	I	E	I	E	I	E	I	E	I	E	I	E	I	E	I
VI	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	39	1	1	1	1	1	1	1	1	0	1	0	2	0	4	0	6		
	40	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	3		
	41	0	1	0	1	0	1	0	1	0	1	0	2	0	2	3	5		
	42	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	2		
	43	0	1	0	2	0	2	0	2	0	1	0	1	0	3	1	3		
	44	0	1	0	1	0	1	0	1	0	1	0	2	0	3	0	3		
	45	0	1	0	1	0	1	0	1	0	1	0	2	0	3	0	4		
	46	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0		
Total	9	1	2	1	3	1	3	1	5	0	1	0	2	0	5	4	15		
VII	Total	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
VIII	49	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1		
	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	51	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1		
	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	53	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0		
	54	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	3		
	55	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1		
	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	60	0	1	0	1	0	1	0	1	0	1	0	2	0	5	0	16		
Total	12	0	1	0	2	0	2	0	2	0	1	0	2	0	5	0	17		
IX	61	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0		
	62	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	3		
	63	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	2		
	64	0	0	0	0	0	0	0	0	0	1	0	2	2	10	36	42		
	Total	4	0	1	0	1	0	1	0	1	0	1	0	2	2	10	36	43	
X	65	0	2	1	3	1	4	1	4	0	1	0	2	0	10	4	27		
	66	0	1	0	1	0	2	0	3	0	1	0	2	1	11	2	26		
	67	0	1	0	2	0	2	0	4	0	1	0	2	0	9	1	25		
	Total	3	1	2	1	3	1	4	1	7	0	1	0	2	2	12	9	38	
XI	68	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1		
	69	0	1	0	1	0	1	1	2	0	1	0	1	0	4	0	8		
	Total	2	0	1	0	1	0	1	1	3	0	1	0	1	0	4	0	8	

Table1: Continued

Region Province		Dialypetalous								Sympetalous							
		Families		Genera		Sections		Species		Families		Genera		Sections		Species	
		E	I	E	I	E	I	E	I	E	I	E	I	E	I	E	I
XII	70	0	1	0	2	0	4	6	13	0	1	0	2	1	11	8	36
	71	0	1	0	1	0	2	0	2	0	1	0	2	0	5	0	18
	72	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0
	73	0	0	0	0	0	0	0	0	0	1	0	1	0	5	0	11
	74	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1
	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	78	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	3
Total	9	0	1	0	2	0	4	6	13	0	1	0	2	1	11	8	40
XIII	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	8
	81	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1
	82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	4	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0
XIV	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
XV	84	0	2	0	2	0	3	3	7	0	1	0	2	0	7	0	18
	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	87	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1
	88	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1
	89	0	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0
Total	6	0	2	0	2	0	3	4	8	0	1	0	2	0	7	0	18
XVI	90	0	2	0	2	0	4	1	4	0	1	0	1	0	5	1	14
	91	0	1	0	1	0	3	0	3	0	1	0	1	0	4	8	23
	92	0	1	0	1	0	3	0	3	0	1	0	1	0	6	0	17
	93	0	1	0	1	0	1	0	1	0	1	0	1	0	5	0	9
	94	0	1	0	2	0	3	0	3	0	1	0	1	0	4	0	9
Total	5	0	2	0	3	0	6	1	6	0	1	0	1	0	7	12	27
XVII	95	0	1	0	1	0	1	0	1	0	1	0	1	0	5	0	11
	96	0	2	0	2	0	3	0	7	0	1	0	1	0	5	1	10
	97	0	2	0	2	0	5	0	6	0	1	0	1	1	6	1	9
	98	0	2	0	2	0	4	0	6	0	1	0	1	0	6	1	15
	99	0	1	0	1	0	2	0	2	0	1	0	1	0	5	0	8
	100	0	2	0	2	0	2	0	4	0	1	0	1	0	5	0	14
	101	0	1	0	1	0	1	0	4	0	1	0	1	0	7	2	19
Total	7	0	2	0	2	0	5	2	11	0	1	0	1	1	8	7	24

Table1: Continued

Region Province		Dialypetalous								Sympetalous								
		Families		Genera		Sections		Species		Families		Genera		Sections		Species		
		E	I	E	I	E	I	E	I	E	I	E	I	E	I	E	I	
XVIII	102	0	2	0	2	0	2	2	14	0	1	0	1	0	7	1	13	
	103	0	2	0	2	0	4	26	41	0	1	0	1	0	6	0	10	
	104	0	2	0	2	0	4	13	18	0	1	0	1	0	5	1	9	
	105	0	2	0	2	0	2	20	32	0	1	0	1	0	5	1	10	
	106	0	1	0	2	0	3	0	4	0	1	0	1	0	3	0	4	
	107	0	2	0	2	0	3	3	8	0	1	0	1	0	3	0	4	
	108	0	2	0	2	0	5	7	16	0	2	0	2	0	7	1	12	
	109	0	2	0	2	0	4	0	8	0	1	0	1	0	6	0	10	
	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	9	0	2	0	3	0	7	81	92	0	2	0	2	0	9	4	23	
XIX	Total	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
XX	Total	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
XXI	115	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	
XXII	116	0	2	0	2	0	2	2	2	0	1	0	1	0	3	0	3	
XXIII	117	0	1	0	1	0	1	1	3	0	1	0	1	0	19	6	35	
	118	0	1	0	1	0	1	0	3	0	1	0	1	0	13	7	26	
	119	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	
Total	3	0	1	0	1	0	1	1	4	0	1	0	1	0	1	20	13	45
XXIV	120	0	2	1	2	2	3	8	10	0	1	0	2	0	19	17	45	
XXV	121	0	1	0	1	0	2	5	10	0	1	0	2	0	15	5	41	
	122	0	1	0	1	0	1	1	2	0	1	0	1	0	4	0	8	
	Total	2	0	1	0	1	0	2	6	11	0	1	0	2	0	15	6	41
XXVI	123	0	1	0	1	0	2	0	2	0	1	0	2	0	6	0	6	
	124	0	1	0	1	0	2	4	6	0	1	0	2	0	14	11	46	
	125	0	0	0	0	0	0	0	0	0	1	0	1	0	4	0	7	
	126	0	1	0	1	0	2	1	5	0	1	0	2	0	10	2	22	
	127	0	1	0	1	0	1	0	2	0	1	0	2	0	10	0	23	
Total	5	0	1	0	1	0	2	5	10	0	1	0	2	1	17	17	51	
XXVII	128	0	1	0	1	0	1	2	4	0	1	0	2	0	6	2	15	
	129	0	0	0	0	0	0	0	0	0	1	0	2	0	9	0	16	
	Total	2	0	1	0	1	0	2	3	0	1	0	2	0	9	3	22	
XXVIII	130	1	2	1	2	1	3	15	15	0	1	0	1	0	3	0	5	
XXIX	131	0	1	0	2	0	5	11	18	0	2	0	2	0	9	23	42	
	132	0	2	0	2	0	7	3	11	0	2	0	2	0	9	2	19	
	133	0	1	0	2	0	10	1	11	0	1	0	1	0	8	2	14	
	134	0	1	0	1	0	6	0	7	0	1	0	1	0	4	0	7	
Total	4	0	2	0	2	0	10	18	30	0	2	0	2	1	11	33	52	
XXX	135	1	2	1	2	1	10	63	69	0	2	0	2	1	5	11	14	
XXXI	136	0	1	0	1	0	3	0	3	0	0	0	0	0	0	0	0	
XXXII	137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Table1: Continued

Region		Province		Dialypetalous								Sympetalous							
				Families		Genera		Sections		Species		Families		Genera		Sections		Species	
				E	I	E	I	E	I	E	I	E	I	E	I	E	I	E	I
XXXIII	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	139	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	1	
	140	0	1	0	1	0	1	0	4	0	1	0	1	0	6	0	13		
	141	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1		
	142	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1		
	Total	5	0	1	0	1	0	1	1	5	0	1	0	2	0	7	2	14	
XXXIV	Total	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
XXXV	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	148	0	1	0	1	0	5	0	6	0	1	0	1	0	3	0	4		
	149	0	1	0	1	0	5	0	6	0	1	0	1	0	2	0	3		
	150	0	1	0	1	0	4	0	5	0	1	0	1	0	1	0	2		
	151	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1		
	152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	8	0	1	0	1	0	5	1	6	0	1	0	1	0	3	1	4	

References

Casper, S.J. 1966, Monographie der Gattung *Pinguicula* L., Biblioth. Bot. 127/128: 1-209.

Fromm-Trinta, E. 1977, *Tayloria* Fromm-Trinta. Nova seção do gênero *Genlisea* St. Hil. (Lentibulariaceae), Boletim Mus. Nac. Rio de J., n. s. Bot. 44: 1-4.

Schlauer, J. 1996, A Dichotomous Key to the Genus *Drosera* L. (Droseraceae), Carniv. Pl. Newslett. 25: 67-88.

Takhtajan, A. 1986, Floristic Regions of the World, Berkeley, Los Angeles, London: University of California Press.

Taylor, P.G. 1989, The Genus *Utricularia*, Kew Bull. Add. Ser. 14: 1-724.

When in Northern California Visit



California Carnivores

Specializing in insect-eating and other exotic plants

- ★ Open all year, call ahead in winter
- ★ Commercially cultivated
- ★ Over 500 varieties on display
- ★ On site & domestic mail order
- ★ We ship potted plants

7020 Trenton-Healdsburg Rd. Forestville, CA. 95436
(707) 838-1630
Price list - SASE
Visit us on the Internet at <http://californiacarnivores.com/>